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SYNCHRONOUS COLLABORATION BASED ON PEER-TO-PEER COMMUNICATION

ABSTRACT OF THE DISCLOSURE

A peer-to-peer protocol is based on the use of global timestamps and client priorities in serializing modifications to a shared workspace of real-time collaboration. The method caters to dynamic clients wherein a client can leave or join an ongoing collaboration session as long as there is always at least one client present/remaining in the collaboration session. The method can support multiple definitions of a modification, including partitioning-based definitions, wherein the method provides full support for locking of partitions, and a full treatment of inter-partition synchronisation via a modification definition over multiple partitions. The method is capable of utilizing the many standard methods of creating a global, distributed, synchronized clock for the global timestamps utilized by it. The method is rollback-based for correcting tentative but incorrect serializations, and provides additional backup in terms of checkpoints for additional safety and for the support of lightweight, pervasive clients. The method includes many optimizations for efficiency, and includes a method of switching to and back from distributed server-based serialization for the periods when the network response is better suited to a distributed server than the peer-to-peer protocol.